

ABSTRACT OF THE DISCLOSURE

[57] Certain embodiments of the present invention provide a method and system for improved ultrasound imaging using single transmission coded excitation. Certain embodiments include encoding a first ultrasound beam with a first code, transmitting the first ultrasound beam on a first path, encoding a second ultrasound beam with a second code, transmitting the second ultrasound beam on a second path and receiving echo signals from the first and second ultrasound beams. The codes may be complimentary Golay codes or other complimentary codes. The first and second paths may be adjacent scan lines. The method may also include match filtering the echo signals with corresponding matched filters. Match filtered echo signals along adjacent scan lines may be filtered, such as with a lateral averaging filter or other finite impulse response filter. Alternate complementary code transmission helps preserve or improve frame rate while maintaining signal-to-noise ratio improvement and range lobe cancellation.